MINI PROJECT REPORT

ON

FARM2HOME

Submitted By

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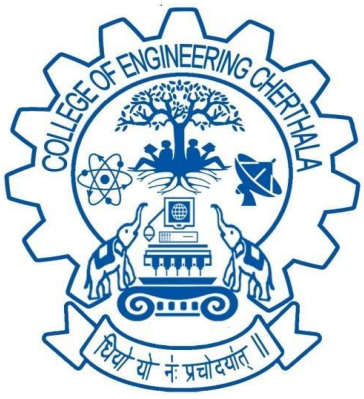

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In partial fulfillment of the requirements for the award of the degree of
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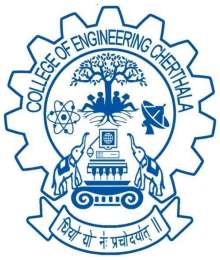

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C E R T I F I C A T E

This is to certify that, the project report titled FARM2HOME is a bonafide record of the CSD334 Mini Project presented by **NANDU A(CEC20CS052), NAYAN NANDANA(CEC20CS053), NIMISHA GANESH(CEC20CS054), VAISHNAV C V(CEC20CS072)** Sixth Semester B. Tech. Computer Science & Engineering students, under our guidance and supervision, in partial fulfillment of the requirements for the award of the degree**, B. Tech. Computer Science & Engineering** of **APJ Abdul Kalam Technological University**

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ABSTRACT

Online whiteboards are versatile tools for collaboration and communication, providing a digital canvas for users to write, draw, and share ideas in real-time. These tools transcend physical boundaries and enable remote teams to work seamlessly. This abstract explores the technical feasibility of online whiteboards, focusing on durability, ease of installation, low maintenance requirements, accessibility, and cost-effectiveness. It also discusses the social feasibility of online whiteboards, highlighting their ability to facilitate collaboration, enhance inclusivity, offer flexibility and convenience, promote engagement, and encourage knowledge sharing. The schedule feasibility of online whiteboards is explored, focusing on 24/7 availability, real-time collaboration capabilities, remote access, quick setup, scheduling features, integration with calendar tools, and recording functionalities.

The operational feasibility is discussed, focusing on user-friendly interface, easy access and setup, collaboration features, multi-platform compatibility, integration with other tools, file sharing and storage capabilities, security, privacy, and technical support. The economic feasibility of online whiteboards is also discussed, highlighting cost savings, reduced infrastructure costs, remote collaboration efficiency, scalability, enhanced productivity, integration with existing tools, subscription-based pricing models, and cost-effective training and support. Overall, online whiteboards offer a comprehensive overview of their potential as effective tools for collaboration, communication, and information sharing in a digital and connected world.

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Chapter 1
INTRODUCTION

A web application or "web app" is a software program that runs on a web server. Unlike traditional desktop applications, which are launched by your operating system, web apps must be accessed through a web browser. Web apps have several advantages over desktop applications. Since they run inside web browsers, developers do not need to develop web apps for multiple platforms. A web application is any application that uses a web browser as a client. The application can be as simple as same as age board or a guest sign-in book on a website, or as complex as a word processor or a spreadsheet. The Benefits of a Web Application is relieves the developer of the responsibility of building a client for a specific type of computer or a specific operating system.

Farm2Home provides an opportunity to streamline the agricultural value chain and reduce inefficiencies in the distribution of farm produce. It represents a new way for farmers to sell their produce to an array of buyers, including agro businesses, retailers, restaurants and consumers. Farm2 home also increases farmers' access to new markets and adds transparency to the value chain. It enables farmers to bypass several intermediaries, resulting in higher income for the farmers, reduced wastage, and the potential to deliver fresher produce to customers. Such benefits are especially significant in developing region.

Chapter 2

PROBLEM STATEMENT

2.1 Problem Statement

. The biggest obstacle in increasing farmers income in India are the profiteering middlemen. Commission agents, traders and wholesalers take a major chunk of profit from farmers produce. This leaves very little for the farmers. In an instance in Nashik, an onion farmer sold onions last month at 35 rupees a kg and the middlemen sold the same for more than 100 rupees a kg. India's farmers are still on a losing side even after several efforts taken by the government.

In Punjab there is no provision for sale of crops other than paddy and wheat. As a result, farmers are forced to sell the produce to middlemen at low prices. Similarly, farmers of Kakinada district of Andhra Pradesh alleged that traders are exploiting them by denying MSP for pulses. The middlemen pay less for the crop value on the pretext of quality factors.

2.2 Objective

An e-commerce website that directly connects farmers to customers can indeed provide a viable solution to some of the challenges faced by farmers. Here's an outline of how such a platform could address these problems:

1.Direct Market Access: Farmers often struggle to reach a wider customer base due to limited market access. An e-commerce website can bridge this gap by providing a platform where farmers can showcase and sell their products directly to customers. This eliminates the need for intermediaries and allows farmers to earn a fair price for their produce.

2. Transparent Pricing: One of the common issues faced by farmers is the lack of transparency in pricing. By using an e-commerce platform, farmers can set their own prices based on their production costs, without interference from middlemen. Customers, in turn, can make informed decisions by comparing prices and choosing products that fit their budget.

3. Improved Profit Margins: Eliminating intermediaries and selling directly to customers can significantly increase farmers' profit margins. By connecting farmers with a larger customer base, the e-commerce platform enables them to sell more products and earn higher profits, ensuring a sustainable livelihood.

4. Reduced Post-Harvest Losses: Another challenge for farmers is the post-harvest losses that occur due to inadequate storage and delayed sales. An e-commerce website can help mitigate these losses by enabling farmers to sell their produce immediately after harvest. This reduces the time between harvesting and selling, ensuring fresh products reach customers while minimizing waste.

5. Product Diversification and Market Feedback: The e-commerce platform can also encourage farmers to diversify their offerings and introduce new products. By monitoring customer preferences and analyzing market trends, farmers can receive valuable feedback, helping them make informed decisions about crop selection and diversification. This promotes innovation and the production of products that align with market demand.

6. Logistics and Delivery Support: An e-commerce platform can provide logistical support to farmers, helping them with packaging, labeling, and transportation of their products. By establishing partnerships with delivery services or developing an in-house delivery network, the platform can ensure efficient and timely delivery of farm produce to customers.

7. Knowledge Sharing and Capacity Building: The e-commerce platform can serve as a hub for knowledge sharing and capacity building among farmers. It can offer resources, tutorials, and expert advice on best agricultural practices, helping farmers enhance productivity, quality, and sustainability. This can contribute to the overall growth and development of the farming community.

8. Consumer Education and Awareness: The e-commerce platform can educate consumers about the importance of supporting local farmers and the benefits of buying directly from them. By sharing stories, highlighting the farmers' journey, and promoting sustainable farming practices, the platform can raise awareness and create a sense of connection between farmers and customers.

Overall, an e-commerce website connecting farmers directly to customers can empower farmers, improve their profitability, reduce waste, and create a more transparent and sustainable agricultural ecosystem. It fosters a direct relationship between producers and consumers, benefiting both parties and contributing to the growth of the farming community

Chapter 3

LITERATURE SURVEY

Significant research has been done on the agriculture market and various studies in journals about the agricultural sector. Making a distinct platform for farmers helps them to share some information about agriculture. Technology is existing everywhere from well equipped cities to a small village in the current generation. So there are no difficulties in using the technology to move into this e-commerce field. In the study, we got to know that the majority of the farmers are not getting enough profits for their crops. All the intermediate market strategies doing all these losses to the hard-working farmers. Despite all the hard work and patience to grow the crops, farmers play a crucial role in the agricultural life cycle but still they are facing a lot of issues to get profit due to their bad circumstances. In India two-third of the one billion population relies on agricultural entities. Now the country is not matching the requirements for agriculture. The farming sector has to formulate with the rise in the market to do such increments there should be unique development that has to be done. That is the new techniques and technology should be used to build modern farming in a high yield manner. A lot of countries are doing their research on technologies to use them in farming, in the process, they are achieving good outcomes. With the spread technology, agricultural system connections between regions become easy and they can easily get the information they are seeking. The modern IT(Information Technology) infrastructure simplifies the integration in the network. We can use information technology in an enormous amount in the agricultural sector. From planting saplings to harvesting the present advances in information

technology help us to adopt new automated ways in farming. All of this resulted in that information technology is very much beneficial in all the techniques carried out in the farm management system.

After harvesting, there is the main struggle to begin selling the product, every farmer wants to sell their product for profits. To analyze the cost in different markets the IT Services are more helpful to farmers. Most of the public are aware of smart phones and their usage which will help to go with the technology. The website we are making is simple in design and easy to understand the interface of the website. Technology has advanced to a high level and farmers have the option of using mobile phones in rural regions effectively.

3.1 CASE STUDY 1

Impact of Online Platforms on Agricultural Value Chains in Developing Regions

- Investigates the impact of online platforms, on agricultural value chains in developing regions.
- Highlights the potential benefits of direct farmer-buyer interactions in reducing intermediaries and increasing farmers' income.
- Provides valuable insights into the role of technology in improving agricultural marketing and distribution.

3.2 CASE STUDY 2

Challenges and Opportunities in Direct Farmer-Buyer E-Commerce Platforms

- Analyzes the challenges and opportunities faced by a direct farmer-buyer e-commerce platform.
- Identifies key factors contributing to the success or limitations of the platform in meeting the needs of users.

- Offers strategic recommendations for sustainable growth and expansion.

3.3 CASE STUDY 3

Enhancing Farmer Income through Digital Agri-Marketing Platform

- Investigates the farmer income and livelihoods.
- Uses qualitative and quantitative methods to assess the changes in farmer income and marketing practices.
- Provides evidence on the potential of digital agri-marketing platforms to improve farmer earnings and market access.

3.4 CASE STUDY 4

User Acceptance of Online Platforms for Fresh Produce Purchases

- Focuses on user acceptance and satisfaction with online platform for fresh produce purchases.
- Conducts surveys and interviews with users, including farmers and buyers, to understand their perceptions and experiences.
- Identifies factors that influence user adoption and provides recommendations for platform improvement.

3.5 CASE STUDY ANALYSIS:

Journals	Merits	Limitations
Impact of Online Agricultural Marketplaces on Farmer Livelihoods	Explores the farmer livelihoods and income generation.	- The study may not capture all factors influencing farmer livelihoods, such as external economic conditions. - Limited to a specific region or sample of farmers, making generalizations
Sustainable Agriculture through Digital Marketing	Promoting sustainable agricultural practices and reducing food waste.	- The study's focus on sustainability may not encompass all aspects of the platform's performance and impact on the agricultural sector. - The findings may not be applicable to other regions or contexts.
User Acceptance of Online Platforms for Fresh Produce Purchases	Focuses on user acceptance and satisfaction with online platform for fresh produce purchases.	- Limited data on the long-term impact of user acceptance on the platform's sustainability and growth.
Consumer Behavior on Online Agricultural Platforms	Investigates consumer behavior and preferences on 'Farm2Home' for purchasing fresh produce.	- Limited data on consumer behavior from other competing platforms, making comparisons challenging.
Enhancing Farmer Income through Digital Agri-Marketing Platforms	Investigates the impact of 'Farm2Home' on farmer income and livelihoods.	The study focuses solely on farmer income and may not cover other aspects of the platform's performance.

Fig.3.5 Case Study Analysis

Chapter 4
PROPOSED SYSTEM

4.1 Solution

Farm2Home is an online shopping website where buyer can buy farm produce directly from farmers. Various types of farmer's products are available for purchase at reliable price. Farmer's E-market basically focuses on user friendly interfaces and promotes user to purchase the product faster.

It has a registration facility and any information entered in registration table is very secure and no one can access the information. Security is given utmost importance while designing the website.

The entire system comprises of 3 users as mentioned below:

1. Farmers

2. Consumers

3. Admin

4.2 Feasibility Study

The main objective of this study is to determine whether the proposed system is feasible or not. Five key constraints are involved in this feasibility

1. Technical Feasibility

2. Social Feasibility

3. Schedule Feasibility

4. Operational Feasibility

5. Economic Feasibility

The proposed system must be evaluated from a technical viewpoint first, and if technically feasible, their impact on the organization must be assessed. If compatible, the operational system can be devised. Then those must be tested for economic feasibility.

4.2.1 Technical Feasibility

The technologies required for the development is identified. Since, both the hardware and software requirements are satisfied, it is technically feasible.

4.2.2 Social Feasibility

The proposed project will be socially feasible. The social feasibility determines whether the project would be accepted by the people. This assumption would in general examine the probability that the project would have to be accepted by the group of people that are directly affected by the proposed system

4.2.3 Schedule Feasibility

The primary analysis depicts that the project can be completed by the schedule. Thus the project is feasible.

4.2.4 Operational Feasibility

The proposed project is beneficial because it is faster and reliable. So, users will be encouraged to use it, and it is expected to serve the user's need. The new system is more user friendly.

4.2.5 Economic feasibility

The system will be developed at reasonable cost with the available hardware, software and manpower. So, its benefits over weigh the cost. So, it is economically feasible.

Chapter 5
SOFTWARE REQUIREMENT SPECIFICATION

5.1 Overall Description

The Farm2home enables vendors to set up and sell products online, customers to browse through the products, and a system administrator to approve and reject requests for new products and maintain lists of product categories. Also the developer is designing an online shopping site to manage the items in the shop and also help customers to purchase them online without visiting the shop physically. The Farm2home will use the internet as the sole method for selling goods to its consumers.

5.1.1 Product Perspective

This product is aimed toward a person who doesn't want to visit the shop as he might not get time for that or might not be interested in visiting there and dealing with a lot of formalities.

5.1.2 Product Functions

This project has many functions. They are listed below:

1. Product Listings: Displaying a wide variety of farm products with relevant information like product name, description, images, pricing, and availability.

2. Search and Filters: Allowing customers to search for specific products and apply filters based on categories, price range, and other attributes.

3. Product Details: Providing detailed information about each product, such as nutritional facts, farming methods, origin, and customer reviews.

4. Cart Management: Enabling customers to add products to their shopping carts, review the cart, and adjust quantities before proceeding to checkout.

5. Inventory Management: Keeping track of product availability and automatically updating stock levels when purchases are made.

6. Checkout and Payment: Providing a secure and seamless checkout process with various payment options, including credit/debit cards, digital wallets, and cash on delivery.

7. Order History: Displaying the customer's past orders, including order status and delivery tracking.

8. Wishlist: Allowing customers to save products they are interested in for future reference.

9. Farmer Profiles: Displaying profiles of individual farmers or farming cooperatives to build trust and foster a connection between farmers and customers.

5.2 User Classes and Characteristics

Customers:

- Characteristics: They are individuals or businesses interested in purchasing farm products directly from farmers.
- Requirements: Easy navigation, detailed product information, secure payment options, and efficient customer support content, and resolving any disputes.
- Requirements: Comprehensive administrative tools, content moderation features, and analytics for monitoring user activity.

Farmers:

- Characteristics: They are agricultural producers offering their products for sale on the platform.
- Requirements: Simple product listing and management tools, transparent pricing, and order tracking.

Admins/Moderators:

- Characteristics: They are responsible for managing the platform, monitoring content, and resolving any disputes.
- Requirements: Comprehensive administrative tools, content moderation features

5.2.1 Operating Environment

- The application is accessible through standard web browsers, including Google Chrome, Mozilla Firefox, Safari, and Microsoft Edge.
- Users can access the platform from various devices, such as desktop computers, laptops, tablets, and smartphones..

5.2.2 Design and Implementation Constraints

The design and implementation of the 'Farm2Home' web application focus on providing a seamless and intuitive user experience.

- User-Friendly Interface:
  The user interface is designed to be visually appealing and easy to navigate. Intuitive layouts and interactive elements enhance the overall user experience.
- Responsiveness:
  The application is designed to be responsive to different screen sizes and devices. Users can access the platform from desktops, laptops, tablets, and smartphones.
- Secure Authentication:
  Robust authentication mechanisms ensure secure login and account management. User information is stored securely to protect privacy and prevent unauthorized access.
- Efficient Search and Filtering:
  The platform provides efficient search options and filters for buyers to find specific products easily. Farmers can categorize their products to enhance discoverability for buyers.
- Order Management:
  The order management system is designed to track and process orders efficiently. Notifications and updates are provided to buyers and farmers regarding order status.

5.2.3 Assumptions and Dependencies

The successful operation of the 'Farm2Home' web application relies on certain assumptions and dependencies:

- Internet Connectivity:
  Users must have access to a stable internet connection to use the platform. The application's functionality is dependent on internet connectivity for real-time interactions.
- Server Infrastructure:
  The application requires a reliable web server infrastructure to host the platform.

- Database Management System:
  The application relies on a MySQL database to store user data, product details, and transaction information.
  The database system must be efficiently managed and maintained to support data integrity.
  Regular security audits and updates are necessary to ensure a secure environment.

- User Engagement:
  The success of the platform depends on active user engagement from both farmers and buyers.
  Regular updates and new product listings encourage user participation and retention.

5.3 External Interface Requirements

5.3.1 User Interfaces

The user interface of the 'Farm2Home' web application will be designed to provide a seamless and intuitive experience for all users, including farmers, buyers, and administrators. The user interface will be visually appealing, user-friendly, and responsive to different devices, such as desktops, laptops, tablets, and smartphones. It will consist of various screens and modules, each catering to specific functionalities of the application.

The home page will display a user-friendly interface with a search bar to search for products, featured products, and categories.

The login and registration pages will allow users to create accounts or log in using their credentials.

The buyer's dashboard will include options to view products, add products to the cart, view order history, and manage account settings.

The farmer's dashboard will enable farmers to add new products, manage their product listings, view orders, and update their profiles.

The admin dashboard will provide admin users with access to manage products, user accounts, orders, and other essential functionalities.

The product details page will display comprehensive information about each product, including images, descriptions, and prices.

The checkout process will guide users through the payment ensuring a smooth transaction.

5.3.2 Hardware Interfaces

The 'Farm2Home' web application will be accessible through standard hardware devices, such as laptops, desktop computers, tablets, and smartphones. It will be compatible with common web browsers like Google Chrome, Mozilla Firefox , Safari, and Microsoft Edge. The application will not require any specific hardware configurations, ensuring its usability across various devices

5.3.3 Software Interfaces

The 'Farm2Home' web application will rely on several software interfaces to provide a seamless experience to users.

- Web Browsers: The application will be compatible with major web browsers, including Google Chrome, Mozilla Firefox, Safari, and Microsoft Edge, to ensure accessibility for a wide range of users.
- Server-Side Software: The web application will run on a web server equipped with software such as Apache, to handle HTTP requests and manage data interactions.
- Database Management System: The application will utilize a MySQL database to store and manage user data, product details, and transaction information.
- Frontend Technologies: The user interface will be developed using HTML, CSS, and JavaScript
- Backend Technologies: The application's backend will be built using PHP to handle user authentication, product management, order processing, and other functionalities.

5.3.4 Communications Interfaces

The 'Farm2Home' web application will employ various communication interfaces to facilitate seamless interactions between users and the system. These interfaces will ensure that information is transmitted securely and efficiently, enabling users to access the application's features without any hindrance.

5.4 System Features

1. User Registration and Authentication: Allow users to create accounts, log in securely, and manage their profiles.
2. Product Listing: Enable farmers to list their products with detailed descriptions and images.
3. Product Search and Filtering: Provide customers with efficient search options and filters to find specific products easily.
4. Shopping Cart: Allow customers to add products to their cart, review their selections, and proceed to checkout.
5. Order Management: Facilitate order processing, tracking, and status updates for customers and farmers.
6. Secure Payment Gateway: Integrate a secure and reliable payment system to process transactions.
7. Product Reviews and Ratings: Let customers leave feedback and rate products to aid other buyers' decision-making.
8. Wishlist: Enable customers to save products for future purchases.
9. Farmers' Profiles: Showcase individual farmer profiles, including information about their farm, practices, and products.

These features can enhance the platform's functionality, user experience, and support the direct connection between farmers and customers, creating a thriving ecosystem for sustainable agriculture**.**

5.5 Other Non Functional Requirements

Performance Requirements

This web application requires a decent web browser preferably Google Chrome or Mozilla Firefox.

5.5.1 Security Requirements

Since these apps store the information in the remote server, data won’t be lost if the client crashes. Also the app will be regularly updated for fixing bugs and adding new features. In case of problems the user can contact the app support team for any help.

5.5.2 Software Quality Attributes

Smart Placement Cell System provides a simple and easy to use UI. Users can access the web application from anywhere and anytime using a web browser.

Chapter 6
SYSTEM DESIGNS

6.1 Design

Design of the system includes mainly two steps:

- System Design
- Detailed Design

In System design a structural framework for the entire system is created. It is done in such a way that related part come under particular groups. Thus after the system design, a network of different groups is obtained. It is the high-level strategy for solving the problem and building a solution. It includes the decision about the organization of the system into subsystems, the allocation of subsystems to hardware and software components, and major conceptual and policy decisions that form the framework for the detailed design.

In detailed design, each group is studied in detail and the internal operations are decided. Based on this, the data structures and the programming language to be used are decided. Apart from detailed design, the system design can be grouped into physical design and structural design. The physical design maps out the details of the physical system and plans the system implementation and specifies the hardware and software requirements.

Structured design is an attempt to minimize the complexity and make a problem manageable by subdividing into smaller segments, which is called modularization or decomposition. In this way structuring minimizes intuitive reasoning and promotes maintainable provable of systems. The structured design partition a program into small, independent modules. They are arranged in a hierarchy that approximates a model of the business are and is organized in a top-down manner. Logical design proceeds in a top-down manner. General features, such as reports and inputs are identified first. Then each is studied individually and in more detail. Hence the structured design is an attempt to minimize the complexity and make a problem.

6.2 Modules

1. CUSTOMER

1.Registration	This is for our new user where they can give their entire details.
2. Login	This is the verification page of users. Only a valid user can login
3.Search product	Implement search functionality and filters to help consumers find specific products easily.
4.Purchase product	This is for purchasing the product which user has kept in wishlist.
5.Add to Cart	Enable consumers to add products to their cart and proceed to checkout.

2. FARMER

1.Registration	Allow farmers to create product listings with details such as product name, description, images, and pricing.
2. Login	This is the verification page of users. Only a valid user can login
3.Upload product	This is for updating the product by farmer which he wants to sell. The farmer can remove or modify the details of the product when required.
4.Veiw Customers details	Enable farmers to track and manage their orders, including order status updates and fulfillment.

6.3 USE-CASE DIAGRAM

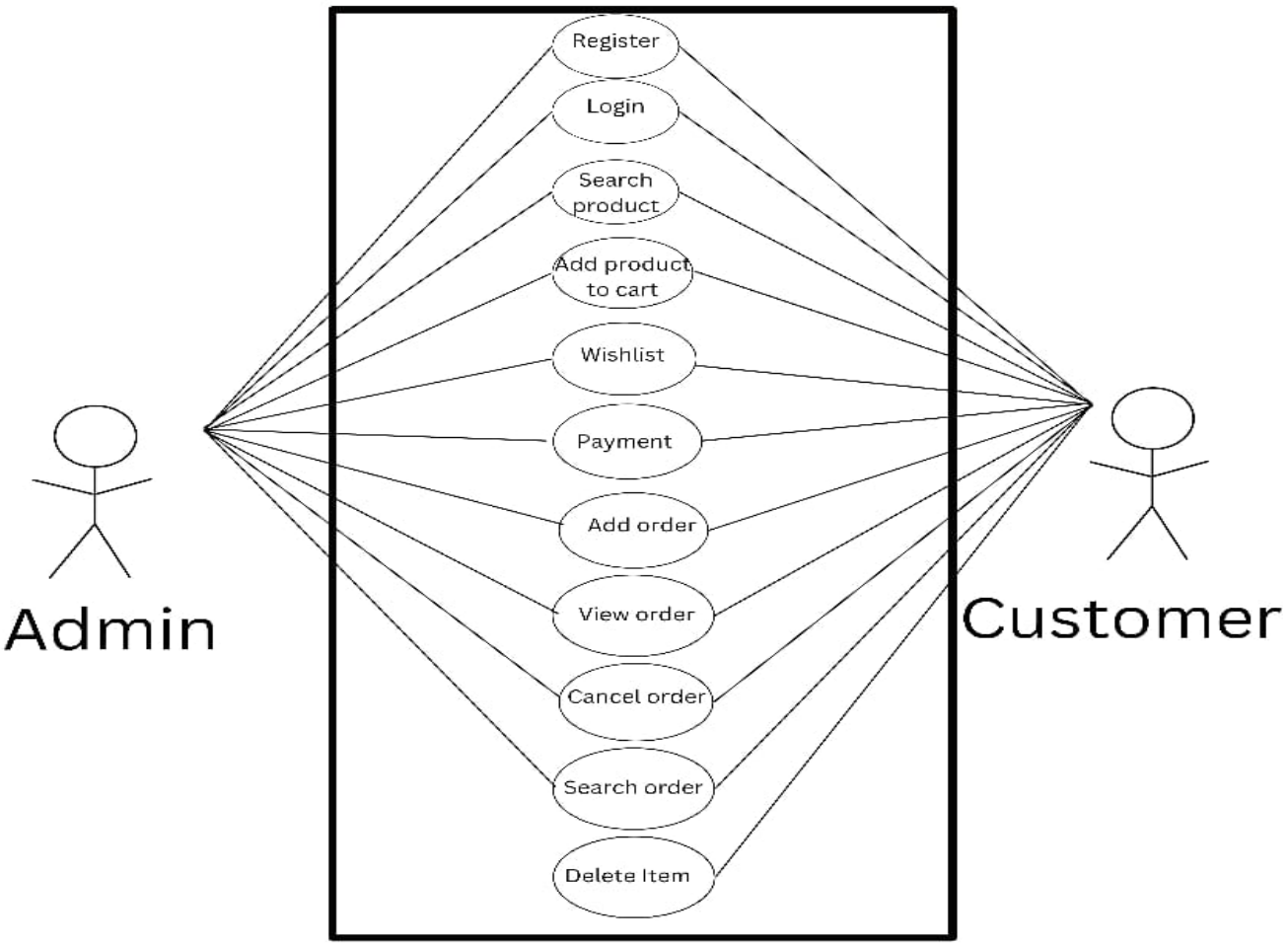


Fig. 6.2: Use Case diagram

The use case diagram shows three different types of actors: Customers, Farmers, and Admin. Each actor has its own set of use cases that they can perform in the e-commerce app. Customers can register, login, browse products, search for products, view product details, add products to cart, remove products from cart, view cart, checkout, view order history and details, and contact customer support. Farmers can register, login, add products, edit products, remove products, view product list, view product details, view order history and details, and contact customer support. Admin can login, view customer accounts, view farmer accounts, view product list, add/edit/remove product categories, manage product listings, view order history and details, and manage customer support.

6.4 SEQUENCE DIAGRAM

A Sequence diagram simply depicts interaction between objects in a sequential order i.e. the order in which these operations take place.

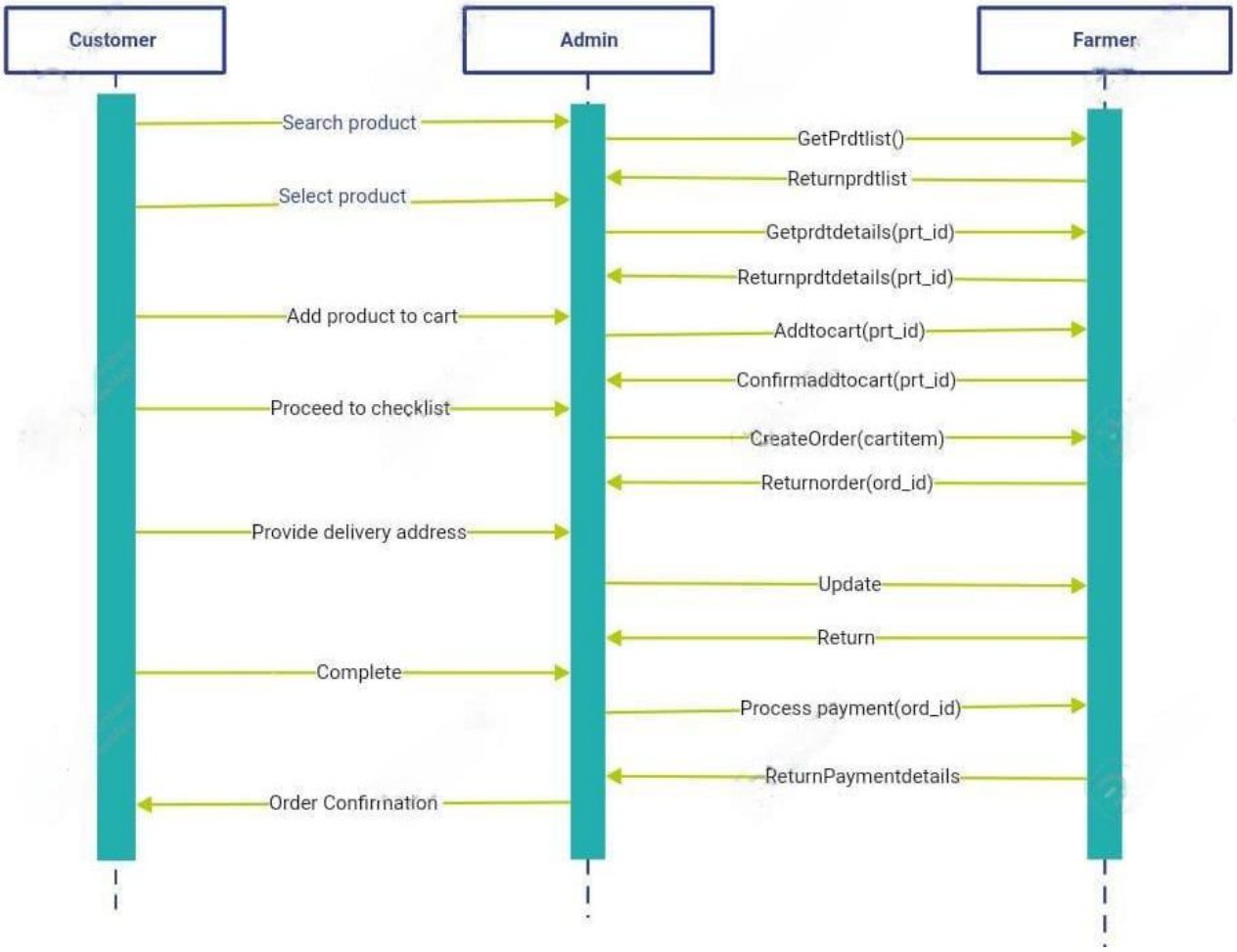


Fig. Sequence diagram

This sequence diagram shows the interactions between the Customer and the Server in the e-commerce app.

● The sequence starts with the Customer logging in to the app andthe Server verifying the login credentials.

● Once the login is successful, the Customer can browse products and search for items. The Server retrieves product information and returns it to the Customer. When the Customer decides to add an item to their cart, the Server updates the shopping cart.

● The Customer can view their cart and place an order.

● The Server verifies the order details and processes the order.

Once the order is processed, the Server sends an orderconfirmation to the Customer.

● The Customer can also view their order history and edit their profile information. The Server retrieves this information and updates it when necessary.

● Finally, the Customer can logout of the app.

6.5 DATA FLOW DIAGRAM

The Data Flow Diagram (DFD) is used for classifying system requirements to major transformation that will be come programs in system design. This is starting point of the design phase that functionally decomposes the required specifications down to the lower level of details

Bubbles: Represent the data
transformations

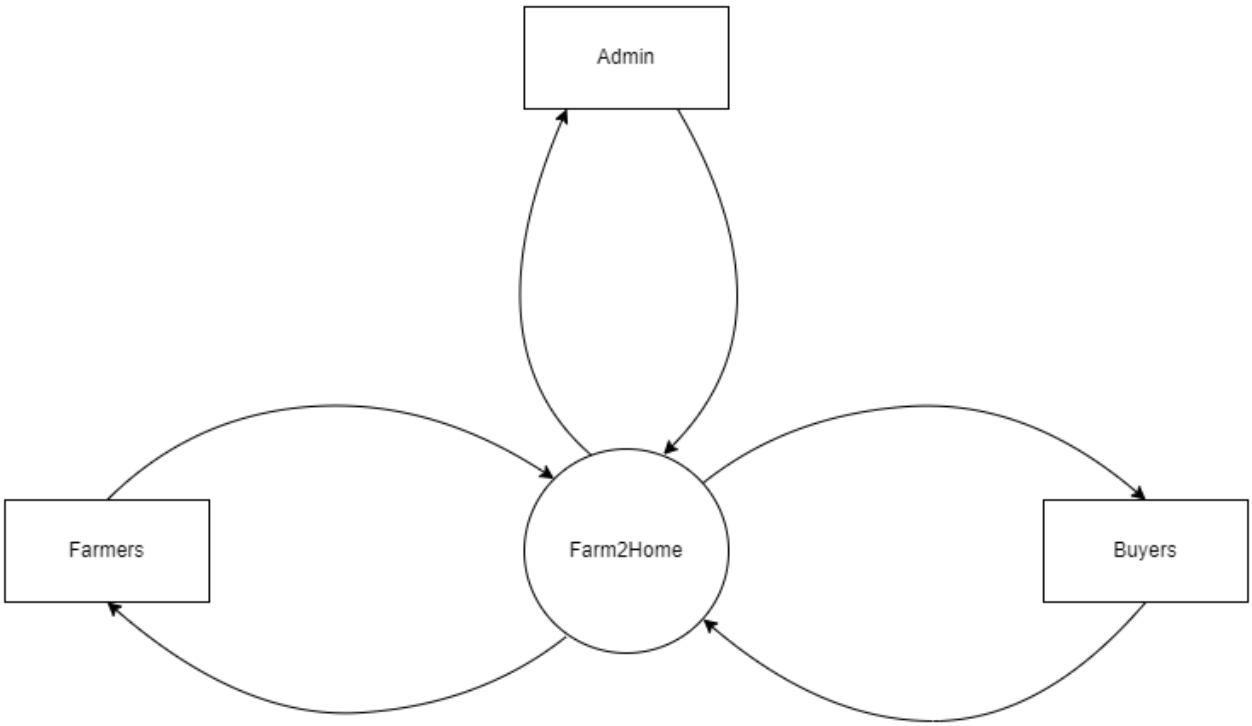
Lines: Represent the logic flow of data.

Data can trigger events and can be processed to useful information. Systems analysis recognizes the central goal of data in organizations.

Description

- Process: Describes how each input data is converted to output data
- Data Store: Describes the repositories of data in a system.
- Data Flow: Describes the data flowing between process, Data stores and entities.
- Source: An external entity causing the origin of data.

6.5.1 Level 0



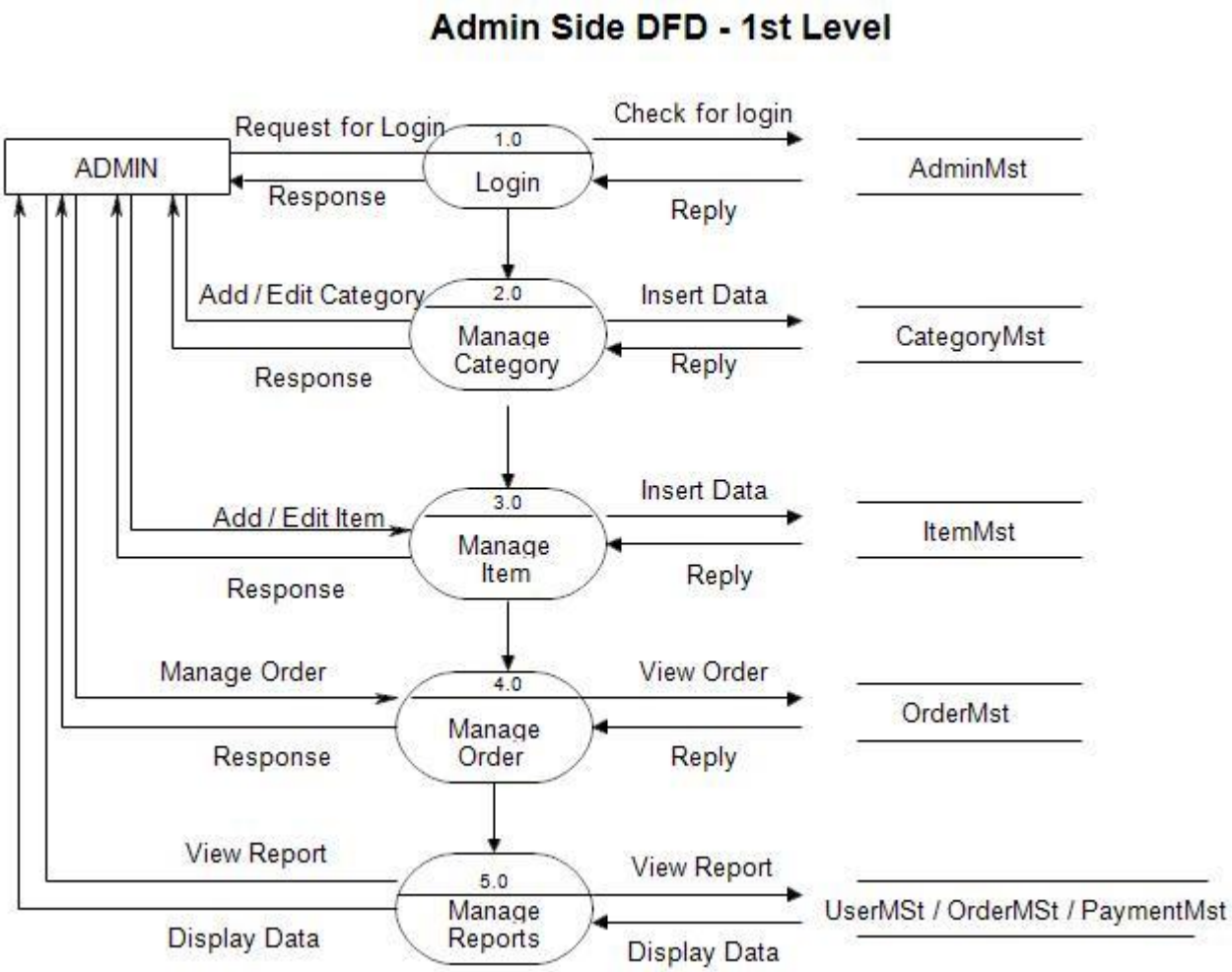
The level 0 Data Flow Diagram (DFD) for the Farm2Home project represents the high-level processes involved in the system, including Farm2Home, Admin, Farmer, and Buyer. Farm2Home: Farm2Home is the main process that represents the e-commerce platform connecting farmers with buyers. It serves as the central hub for managing and facilitating the buying and selling activities. It receives data and requests from both the Admin and the Buyer processes

- Admin: The Admin process is responsible for managing the overall system and maintaining the platform. It can perform tasks such as managing user accounts, monitoring transactions, and updating product listings. It interacts with the Farm2Home process to provide administrative functionalities and update system data.

- Farmer: The Farmer process represents the farmers or producers who offer their products for sale on the Farm2Home platform. It interacts with the Farm2Home process to provide product information, update product inventory, and manage pricing. The Producer process can receive orders and notifications from the Farm2Home process regarding product availability and sales.

- Buyer: The Buyer process represents the users or customers who browse and purchase products from the Farm2Home platform. It interacts with the Farm2Home process to search for products, place orders, and make payments. The Buyer process receives product information, availability, and purchase confirmation from the Farm2Home process. In the level 0 DFD, the processes are represented as separate boxes, and the arrows represent the data flow between them. The Farm2Home process serves as the central hub, facilitating communication and data exchange between the Admin, Producer, and Buyer processes

6.5.2 Level 1(Admin)



The level 1 Data Flow Diagram (DFD) for the Farm2Home project focuses on the processes related to the Admin's activities, including Add Product, Delete Product, and managing the Farmer table.

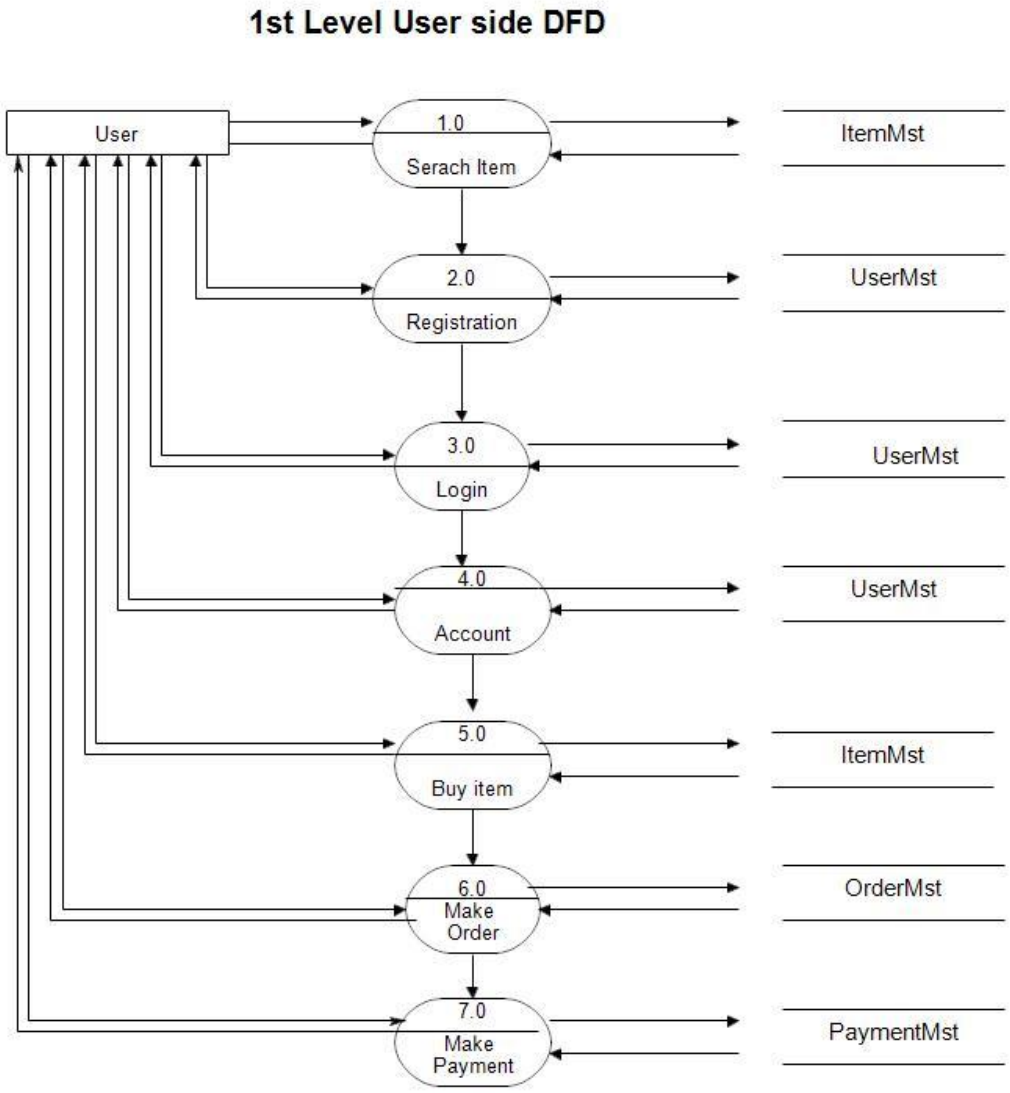
- Admin: The Admin process represents the system administrator or the authorized user responsible for managing the platform. It interacts with other processes to perform administrative tasks and maintain the system's integrity.

- Add Product: The Add Product process is responsible for adding new products to the platform's product catalog. It receives product information such as name, description, price, and image from the Admin. The Add Product process updates the product catalog and notifies the Admin about the successful addition.

- Delete Product: The Delete Product process allows the Admin to remove products from the platform's catalog. It receives a request from the Admin to delete a specific product. The Delete Product process updates the product catalog by removing the requested product and notifies the Admin about the successful deletion.

- Add Product Farmer Table: The Add Product Farmer Table process handles the association of products with the respective farmers or producers. It receives the product information and the farmer's details from the Admin. The Add Product Farmer Table process updates the Farmer table, linking the product with the corresponding farmer or producer. In the level 1 DFD, each process is represented as a separate box, and the arrows depict the flow of data between the processes.

6.5.3 Level 1(User)

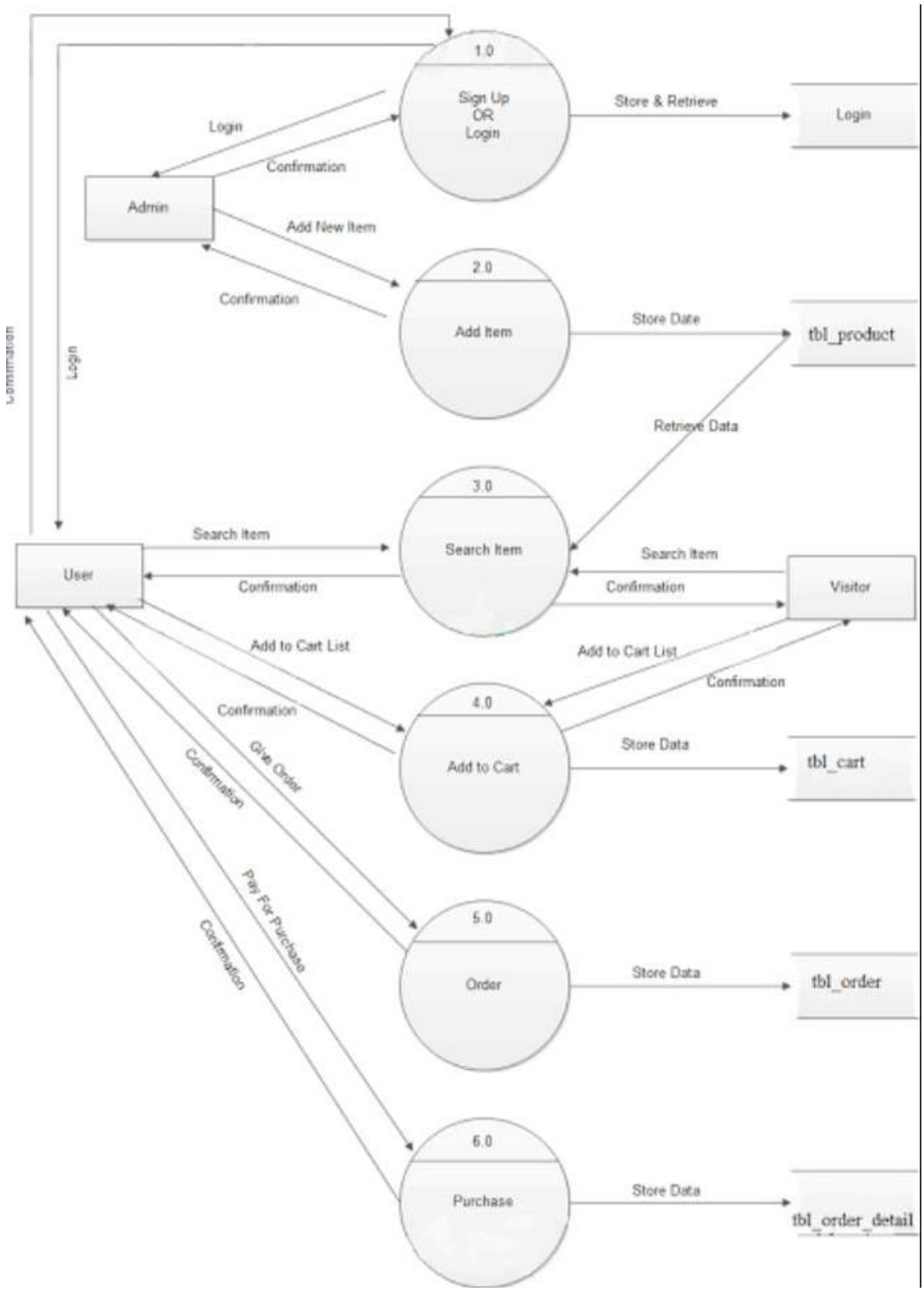


In the level 1 user Data Flow Diagram (DFD) for the Farm2Home project, we will focus on the buyer's activities related to managing placing orders. Buyer: The Buyer process represents the user who is interested in purchasing products from the platform. The Buyer interacts with other processes to place orders.

The Buyer process represents the user who wants to purchase products from the platform. The Buyer interacts with other processes to complete the payment for their selected products

In the level 1 user DFD, the focus is on the buyer-specific processes related to the payment process. The Check Selected Product process ensures that the selected products are available, the Compute Price process calculates the total price, and the Prepare Receipt process generates the receipt for the buyer.

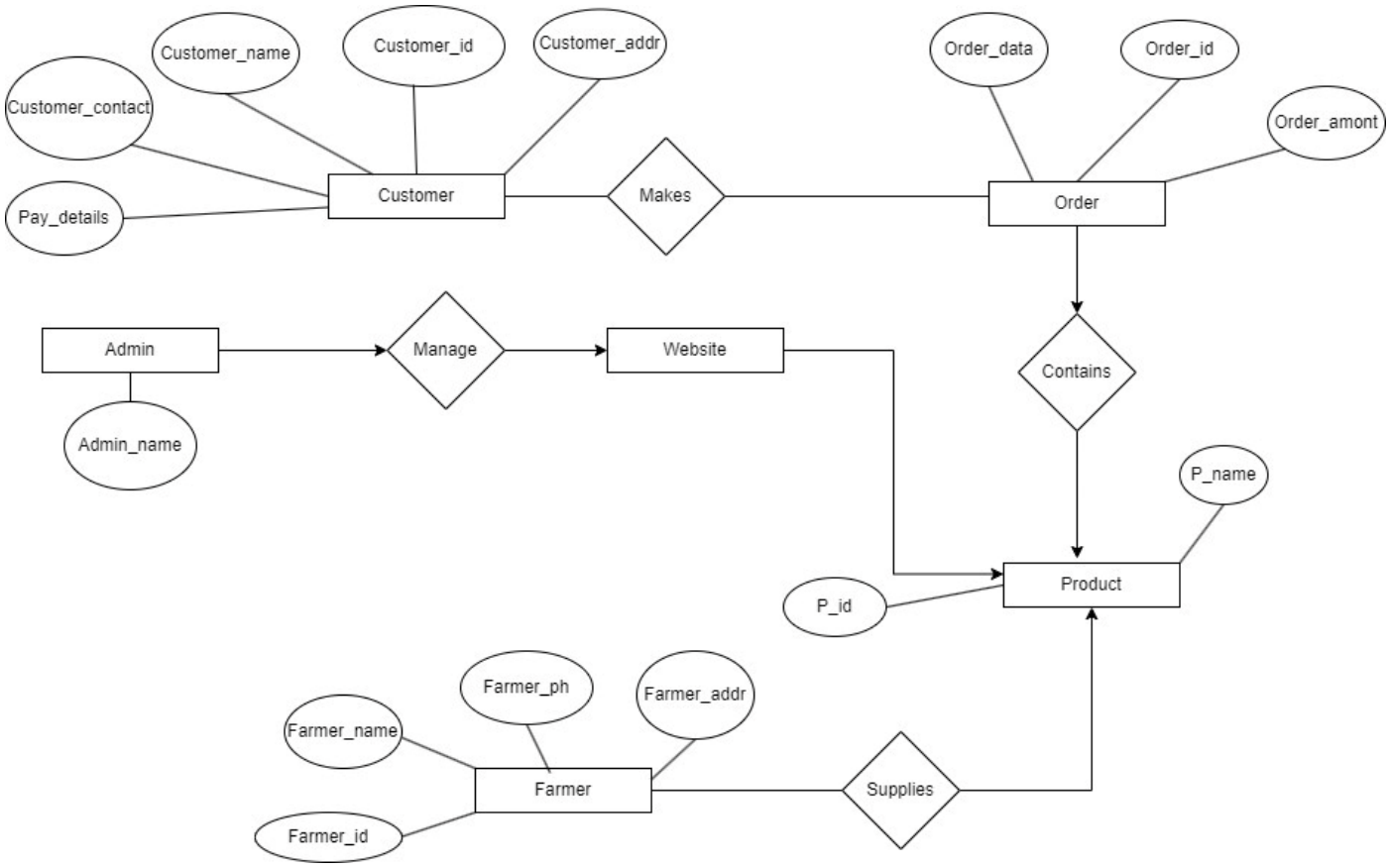
6.5.4 Level 2



In the level 2 Data Flow Diagram (DFD) for the Farm2Home project, we will focus on the buyer's activities related to placing an order and obtaining order details. Let's explain each process in detail:

In the level 2 DFD, the focus is on the buyer-specific processes related to placing an order and obtaining order details. The Get an Order process handles the buyer's order request, the Order Details process stores and manages the order information, the Admin process oversees the overall operation, and the Prepare Unique Transaction ID process generates unique identifiers for each transaction

6.6 ER DIAGRAM



The ER diagram shows the entities in the e-commerce app and the relationships between them. There are two types of users: Customers and Farmers. Each user has their own unique ID and login information. Both Customers and Farmers can have one or more addresses associated with their account. Each address has a unique ID and information about the street, city, state, and zip code. The main entity in the app is the Product entity. Each product has a unique ID, a name, a price, a quantity, and the ID of the farmer who produced it. Orders are placed by Customers and include a date, a total amount, and the customer ID. Each order can have one or more products associated with it through the Order Product entity, which includes the order ID, product ID, and quantity of that product in the order.

Chapter 7

SOFTWARE AND HARDWARE REQUIREMENT

7.1 Software Requirement

- Frontend: HTML, CSS, JavaScript
- Database: MYSQL, PHP using cross platform web server XAMPP

7.2 Hardware Requirements

Requires a laptop or computer to access web browser.

7.2.1 Computer

- Processor: Minimum Intel i3, AMD Ryzen 3 preferably Intel i5, AMD Ryzen 5 and above
- RAM: Minimum 4GB preferably 8GB and above
- CPU: 2 cores (2.30GHz) minimum
- Storage: 50GB (minimum)

Chapter 8
IMPLEMENTATION

The implementation phase plays a crucial role in ensuring the successful transition from the old system to the new design. It involves a series of activities that are undertaken to establish standards and create a reliable system that meets the requirements of the users. By implementing the new computerized system, we aim to improve the overall efficiency of the 'Farm2Home' platform while reducing manual labor and streamlining operations.

8.1 Coding Environment Used

For the implementation of the 'Farm2Home' project, we utilized Visual Studio Code as the primary source-code editor. Visual Studio Code is a versatile and feature-rich editor developed by Microsoft, available for Windows, Linux, and macOS. It provides support for debugging, intelligent code completion, and other productivity-enhancing features. Additionally, we utilized XAMPP software to implement the MYSQL database, which serves as the backend for storing and retrieving data.

8.2 Login Module

The Login Module is a crucial component of the 'Farm2Home' application. It enables users to log in and access the various facilities provided by the platform. The Login page consists of text fields where users can enter their credentials, including their username and password. Only valid and authenticated users are granted permission to utilize the application's features. The login panel also includes a dropdown menu to select the user type, distinguishing between Admin, User, and Farmer.

8.3 Create Users

The Create Users module allows shopkeepers or administrators to add new users to the 'Farm2Home' application. By filling out the required information, users can create an account and gain

access to the platform. This feature ensures a seamless onboarding process for new users and enables them to enjoy the benefits of the application.

8.4 Create Farmers

The Create Farmers module is designed specifically for administrators. It allows them to add new farmers to the 'Farm2Home' platform. Farmers, once registered, can log in using their credentials and begin selling their products directly to customers. This module helps expand the network of farmers and provides buyers with a wider range of options.

8.5 View Products

Upon logging into their respective dashboards, users can view the available products on the 'Farm2Home' platform. This module provides a comprehensive catalog of products, enabling users to explore and select items based on their preferences.

8.6 Upload Products

The Upload Products module is dedicated to farmers. Farmers can upload their products onto the 'Farm2Home' platform, including details such as product name, description, price, and images. This module simplifies the process of listing products and ensures that buyers have access to a diverse range of fresh produce.

8.7 Add Category and Products

The Add Category and Products module empowers farmers to create new categories for their products and add products to the respective categories. This feature enhances the organization and navigation of the product catalog, making it easier for buyers to find and purchase the desired items.

8.8 Product Listing and Catalog Module

The Product Listing and Catalog Module focus on providing a comprehensive listing of available products on the 'Farm2Home' platform. It includes features such as search, sorting, and filtering to

enhance the browsing experience for buyers. This module ensures that buyers can easily find and select the products they are interested in.

8.9 Shopping Cart and Checkout Module

The Shopping Cart and Checkout Module enable users to add products to their cart, review their selections, and proceed to the checkout process. This module facilitates a seamless and user-friendly shopping experience, allowing buyers to manage their orders and complete the purchase securely.

8.10 Payment Gateway Integration Module

The Payment Gateway Integration Module is responsible for integrating secure payment gateways into the 'Farm2Home' application. This module enables buyers to make online payments using various payment methods, ensuring a smooth and secure transaction process.

8.11 Order Management Module

The Order Management Module focuses on managing and tracking orders placed by buyers. It includes features such as order confirmation, order status updates, and order history. This module allows administrators, farmers, and buyers to monitor the progress of orders and ensure timely delivery.

Chapter 9

RESULT & ANALYSIS

9.1 Screenshots

Fig. 9.1.1: Home Page

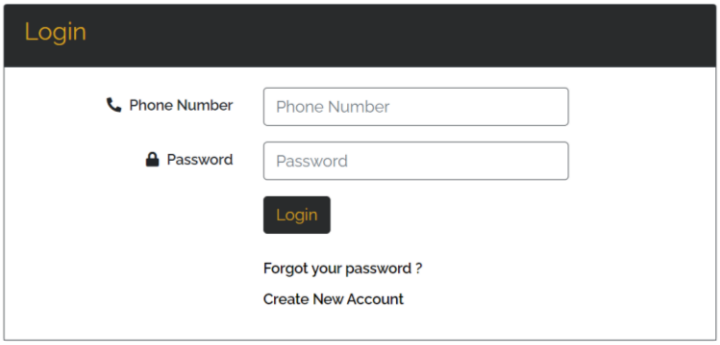


Fig. 9.1.2: Buyer Login Page

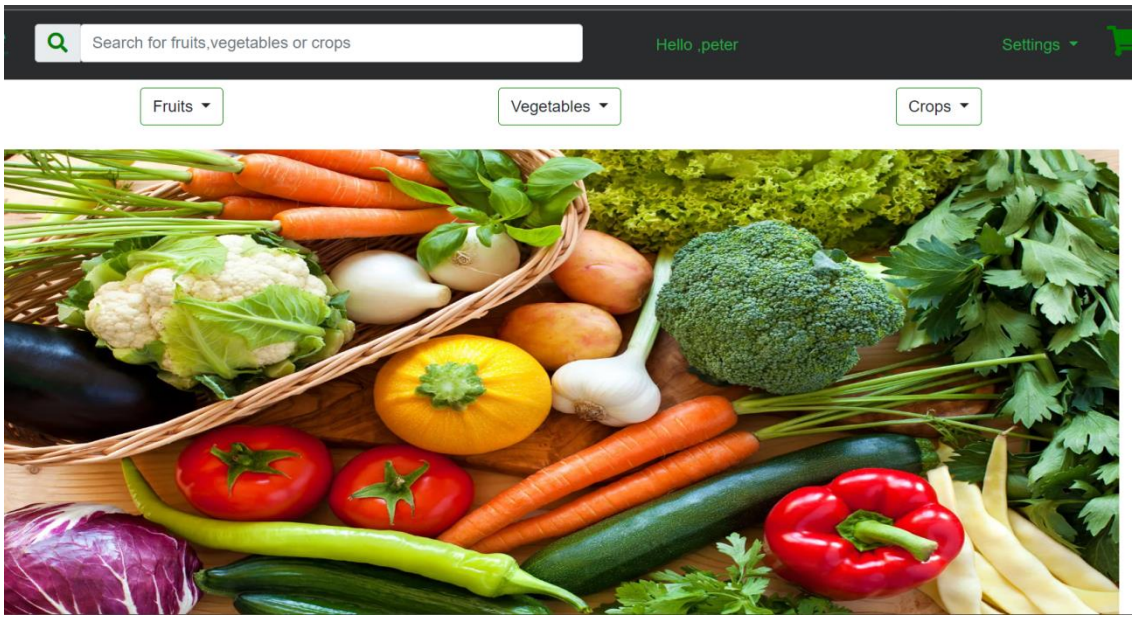


Fig. 9.1.13: Buyer Portal

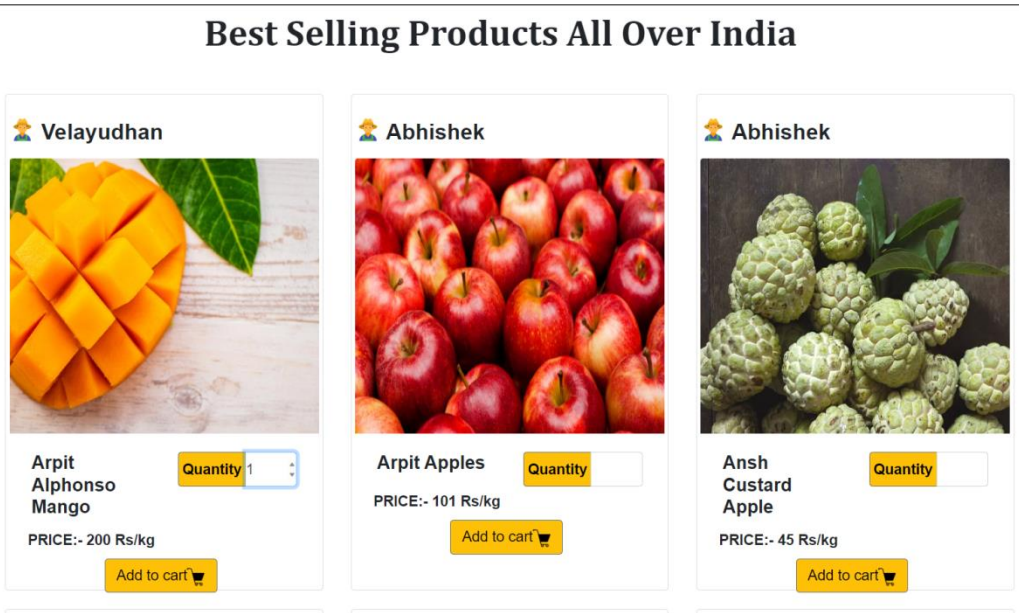


Fig. 9.1.4: Buyer Home Page

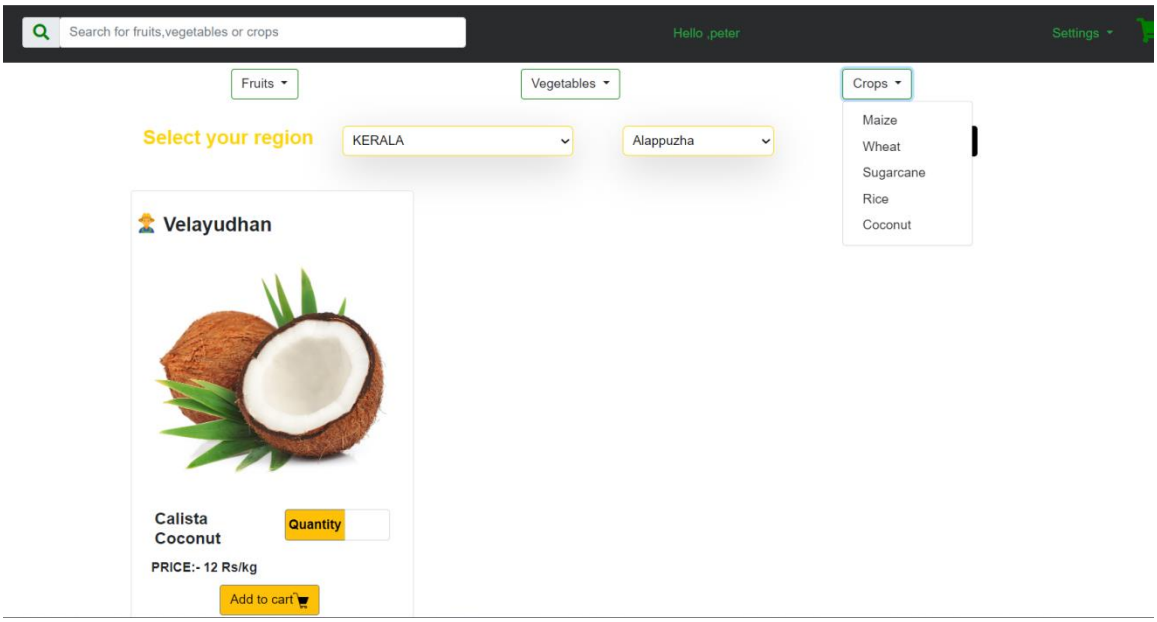


Fig. 9.1.5: Buyer Portal (Product Filtering)

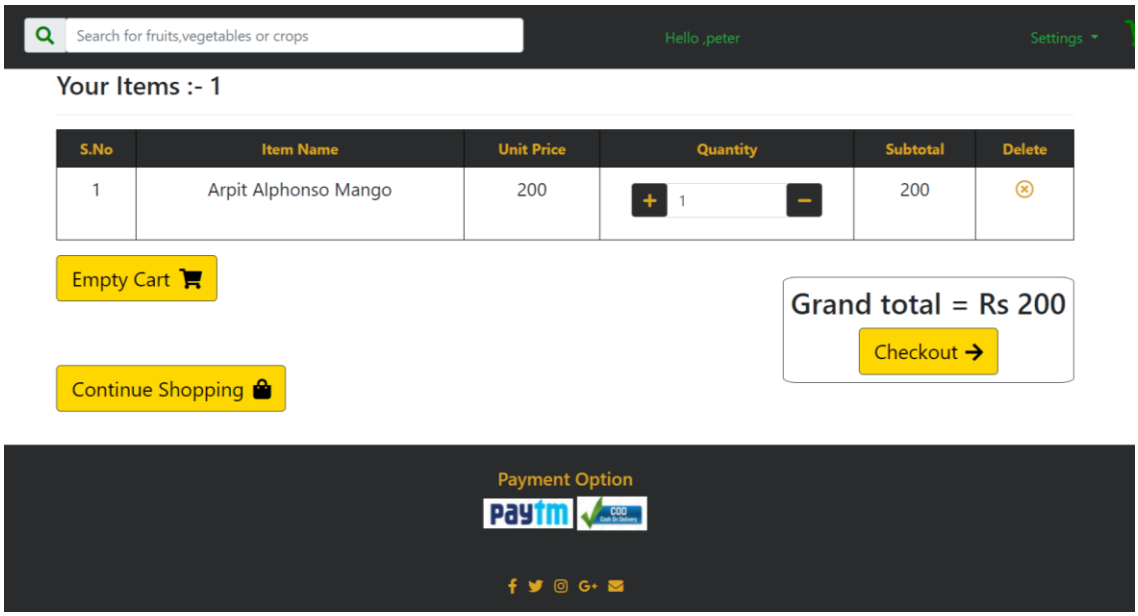


Fig. 9.1.6: Cart Page

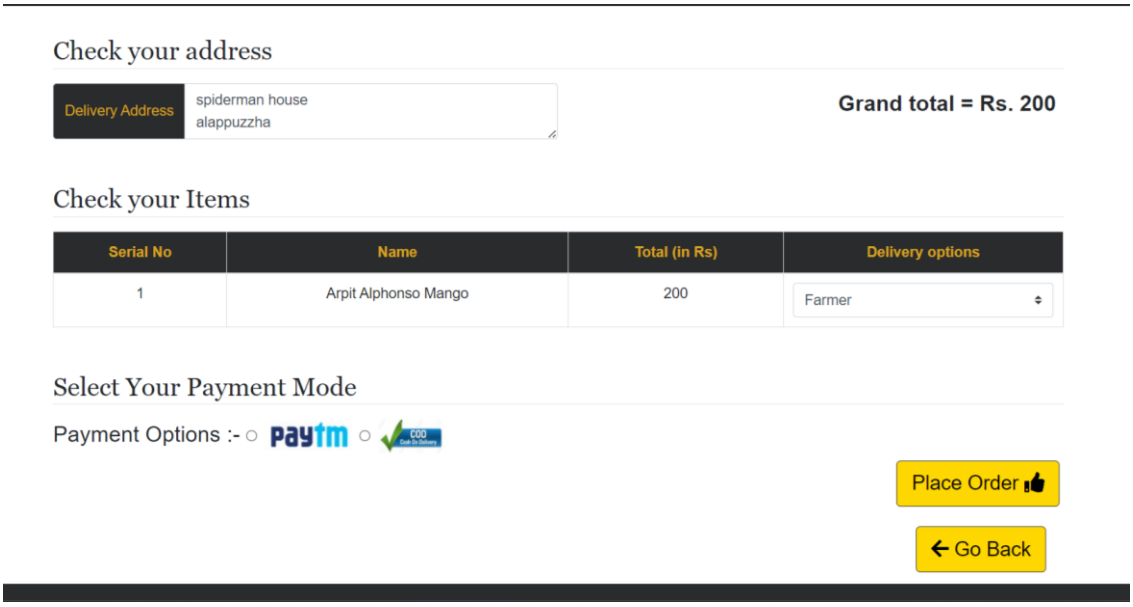


Fig. 9.1.7: Payment Page

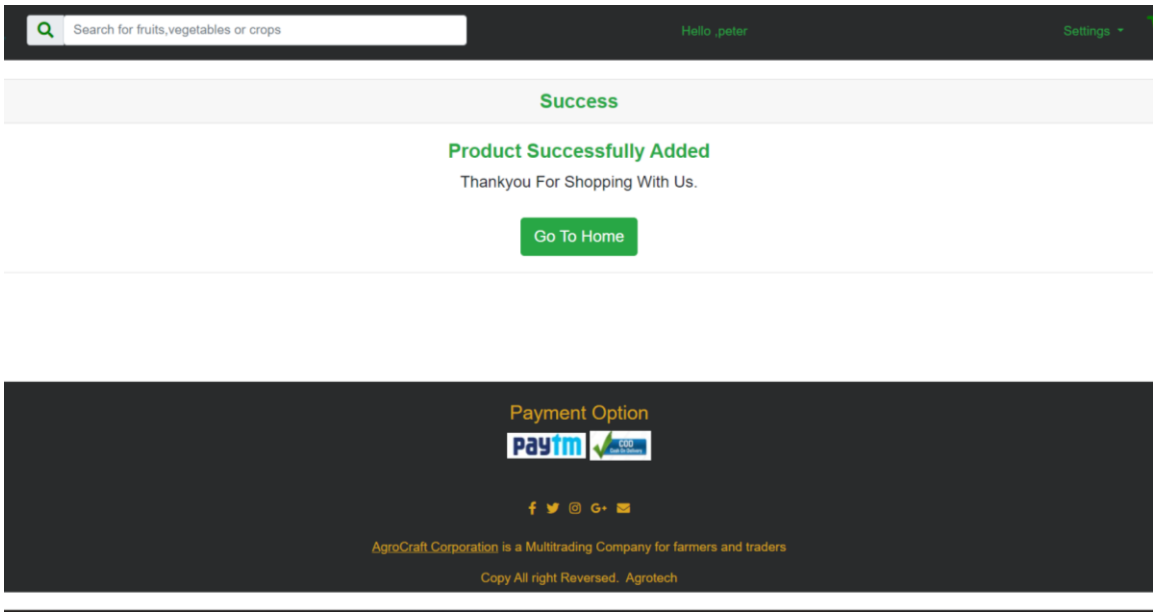


Fig. 9.1.8: Order Successful Page

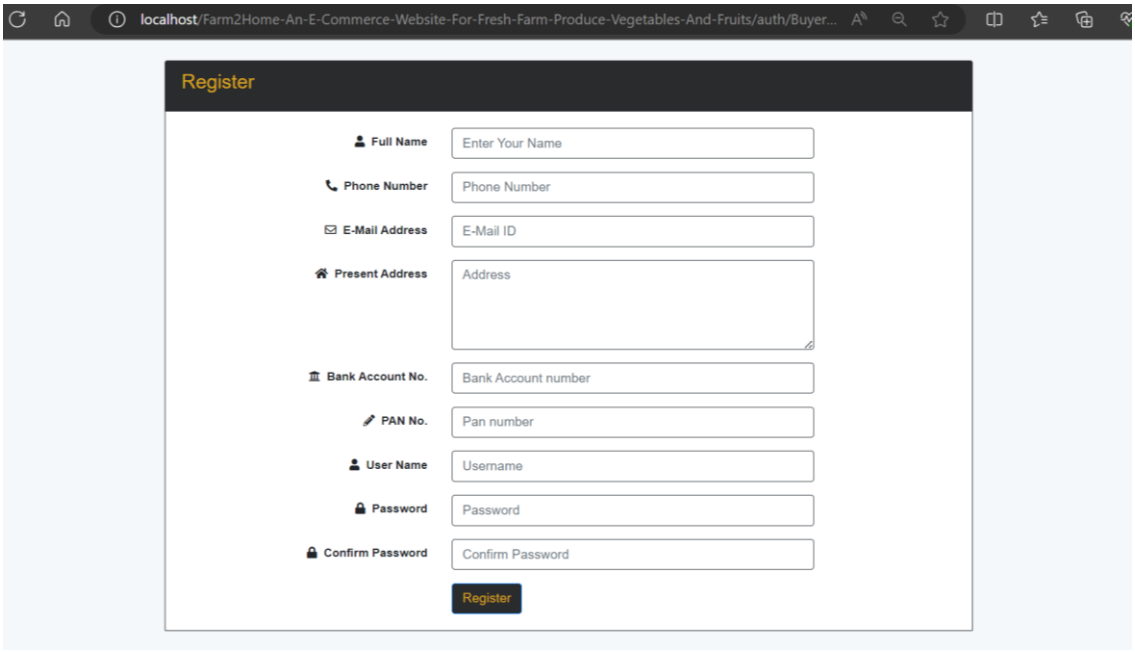


Fig. 9.1.9: New Buyer Registration

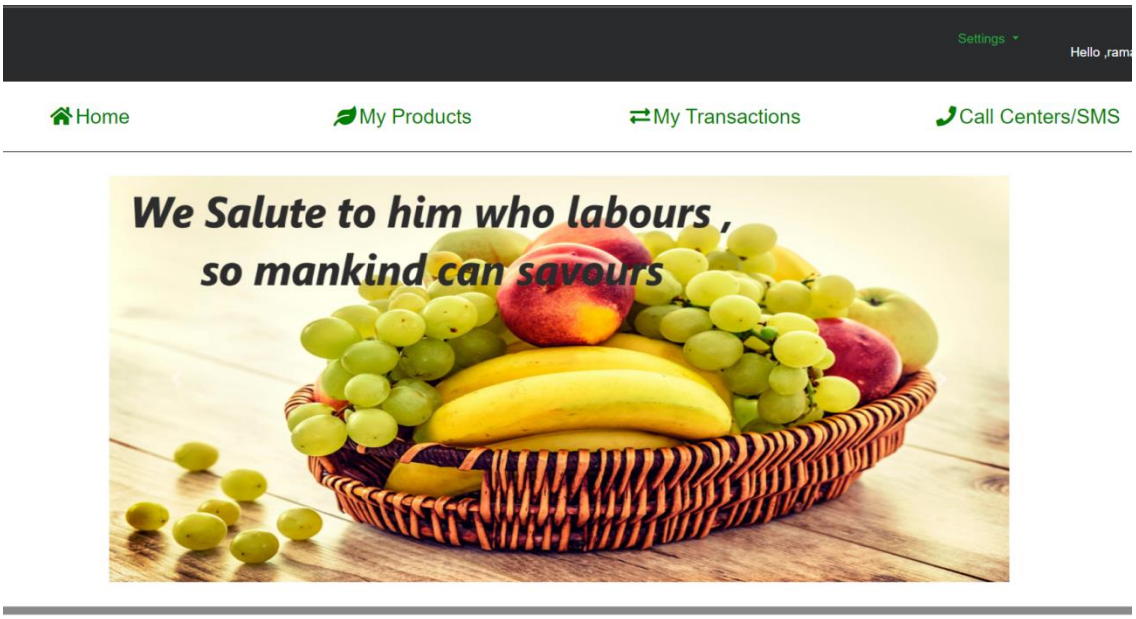


Fig. 9.1.10: Farmer Portal

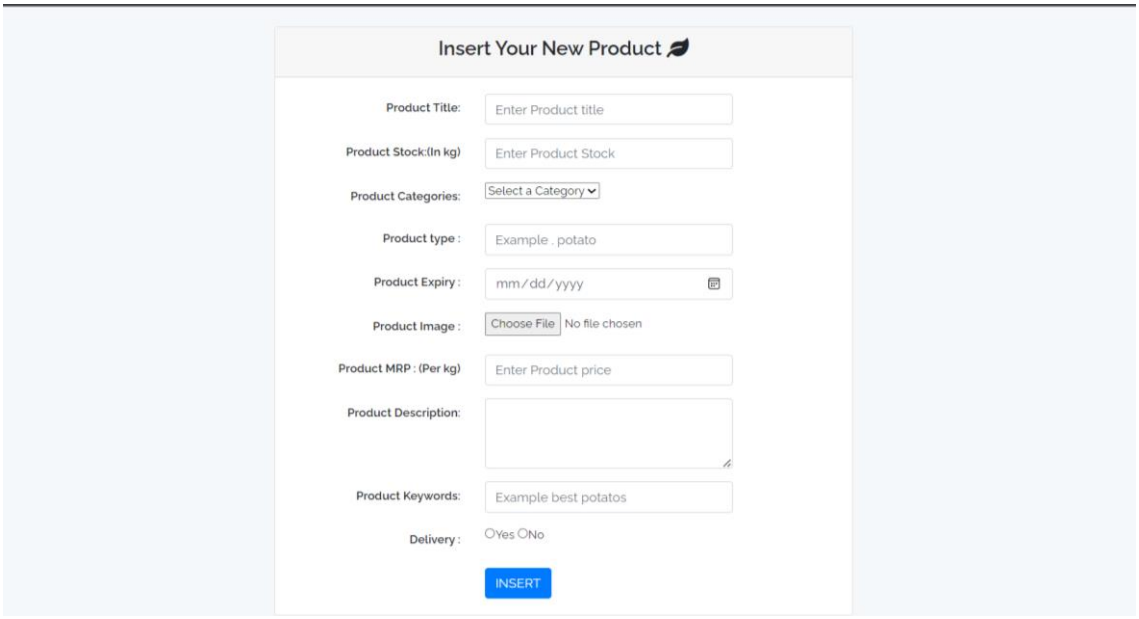


Fig. 9.1.11: Farmer - Add New Product

9.2 Test Cases

9.2.1: Admin Test cases

Test Case ID	Test Scenario	Test Steps	Test Data	Expected Result	Actual Result	Pass/Fail
ADM001	Admin Login	1. Open the 'Farm2Home' web application.	Admin username: admin123 Admin password: password123	The admin should be successfully logged in and redirected to the admin dashboard.	The admin is logged in and redirected to the admin dashboard.	Pass
ADM002	Add Farmer	1. Open the admin dashboard.	Fill in the required details for a new farmer (name, email, phone, etc.)	The new farmer should be successfully added to the system.	The new farmer is added to the system and displayed in the farmer list.	Pass
ADM003	Update Farmer	1. Open the admin dashboard.	Select a farmer from the farmer list Modify the farmer's details (e.g., update the phone number)	The farmer's details should be successfully updated in the system.	The farmer's details are updated and saved in the system.	Pass
ADM004	Delete Farmer	1. Open the admin dashboard.	Select a farmer from the farmer list Click on the 'Delete' button Confirm the deletion	The selected farmer should be successfully deleted from the system.	The selected farmer is deleted from the system and removed from the farmer list.	Pass
ADM005	Generate Sales Report	1. Open the admin dashboard. 2. Navigate to the reporting section. 3. Select a specific time period.	Select a specific time period for the sales report	A sales report for the selected time period should be generated and displayed.	The sales report for the selected time period is generated and displayed.	Pass

Fig. 9.2.1: Admin Test cases

9.2.2: Buyer Test Cases

Test Case ID	Test Scenario	Test Steps	Test Data	Expected Result	Actual Result	Pass/Fail
BUY001	Buyer Registration	1. Open the 'Farm2Home' web application.	Buyer Name: John Buyer Email: john@example.com Buyer Password: pass123	The buyer should be successfully registered and redirected to the login page.	The buyer is registered and redirected to the login page.	Pass
BUY002	Buyer Login	1. Open the 'Farm2Home' web application.	Buyer Email: john@example.com Buyer Password: pass123	The buyer should be successfully logged in and redirected to the buyer dashboard.	The buyer is logged in and redirected to the buyer dashboard.	Pass
BUY003	View Products	1. Open the buyer dashboard.	-	The buyer should be able to view the products available on the 'Farm2Home' platform.	The buyer can view the products displayed on the platform.	Pass
BUY004	Add Product to Cart	1. Open the buyer dashboard.	Select a product from the available options	The selected product should be added to the buyer's cart.	The selected product is successfully added to the buyer's cart.	Pass
BUY005	Place Order	1. Open the buyer dashboard. 2. Go to the cart section. 3. Review the products in the cart.	Review the products in the cart	The buyer should be able to place the order successfully.	The order is placed successfully, and the buyer receives an order confirmation.	Pass

Fig. 9.2.2:Buyer Test Cases

9.2.3: Farmer Test Case

Test Case ID	Test Scenario	Test Steps	Test Data	Expected Result	Actual Result	Pass/Fail
FAR001	Farmer Registration	1. Open the 'Farm2Home' web application.	Farmer Name: Velayudhan Farmer Email: velayudhan@example.com Farmer Password: pass123 Farm Details: XYZ Farm, Address	The farmer should be successfully registered and redirected to the login page.	The farmer is registered and redirected to the login page.	Pass
FAR002	Farmer Login	1. Open the 'Farm2Home' web application.	Farmer Email: velayudhan@example.com Farmer Password: pass123	The farmer should be successfully logged in and redirected to the farmer dashboard.	The farmer is logged in and redirected to the farmer dashboard.	Pass
FAR003	Add Product	1. Open the farmer dashboard.	Product Name: Apples Product Description: Freshly harvested apples Product Price: ₹2.99 per kg Product Quantity: 50 kg	The new product should be successfully added to the farmer's product list.	The new product is added to the farmer's product list.	Pass
FAR004	Update Product Details	1. Open the farmer dashboard.	Select a product from the product list Modify the product details (e.g., update the price) Click on the 'Save' button	The product details should be successfully updated in the farmer's product list.	The product details are updated and saved in the farmer's product list.	Pass
FAR005	Delete Product	1. Open the farmer dashboard.	Select a product from the product list Click on the 'Delete' button Confirm the deletion in the prompt	The selected product should be successfully deleted from the farmer's product list.	The selected product is deleted from the farmer's product list.	Pass

Fig. 9.2.3: Farmer Test Case

Chapter 10
CONCLUSION & FUTURE SCOPE

In conclusion, the development of an eCommerce website specifically designed for farmers that connects them directly to customers is a valuable and innovative solution in today's digital era. This project aims to address the challenges faced by farmers in traditional distribution channels by providing them with a convenient platform to sell their products directly to consumers.

By leveraging the power of technology and the internet, the eCommerce website creates an efficient and transparent marketplace, eliminating intermediaries and reducing transaction costs. Farmers can showcase their products, set prices, and manage their inventory, thereby gaining better control over their businesses.

Moreover, the direct connection between farmers and customers fosters a sense of trust and builds stronger relationships. Customers can access a wide range of farm-fresh products, support local agriculture, and make informed purchasing decisions by learning about the farming practices and sustainability efforts employed by the farmers.

The eCommerce website also offers various features such as secure online transactions, reliable delivery options, and customer reviews, enhancing the overall user experience. Additionally, the platform can be optimized for mobile devices, making it accessible to a larger customer base.

By embracing this innovative approach, farmers can expand their market reach, diversify their customer base, and increase their revenue potential. They can explore new marketing opportunities and build a loyal customer following, leading to long-term business sustainability.

Overall, the eCommerce website for farmers provides a win-win situation, benefiting both farmers and customers. It empowers farmers to thrive in the digital economy while offering consumers convenient access to fresh and locally sourced products. This project not only contributes to the growth and development of the agricultural sector but also promotes sustainable and responsible consumption practices.

REFERENCES

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[3] "Connecting Farmers Directly with Consumers," FarmMatch, 2021.

[4]"10 Top Tools for Mobile App Development," Smashing Magazine, 2021.

GLOSSARY

- Agro Businesses: Businesses involved in the production, processing, and distribution of agricultural products.
- Client: The user interface or application that interacts with the web application on the server.
- Desktop Applications: Traditional software programs that are installed and run on a user's computer.
- Farm Produce: Agricultural products or goods produced on a farm.
- Farmers' Profiles: Individual profiles for farmers that showcase information about their farms, practices, and products.
- 'Farm2Home' Platform: The online shopping website that connects buyers directly with farmers to purchase farm produce.
- Performance Requirements: The criteria that determine the web application's efficiency and responsiveness, including browser compatibility.
- Product Listing: The feature that enables farmers to list their products on the platform, providing detailed descriptions and images.
- Product Reviews and Ratings: The functionality that allows customers to leave feedback and rate products to aid other buyers' decisions.
- Product Search and Filtering: The functionality that allows customers to efficiently search for specific products using various filters.
- Secure Payment Gateway: An integrated and secure payment system that enables customers to make safe transactions.
- Security Requirements: The measures and protocols put in place to ensure the security and confidentiality of user data and transactions.
- Shopping Cart: The virtual cart where customers can add selected products before proceeding to the checkout process.
- Software Quality Attributes: The qualities that define the web application's usability, user interface design, and accessibility, such as a simple and easy-to-use UI.
- User Registration and Authentication: The process of allowing users to create accounts on the

web application and securely logging them in with their credentials.

- Visual Studio Code: A source-code editor developed by Microsoft, used for writing and editing code in various programming languages.
- Web Application: A software program that runs on a web server and is accessed through a web browser. It does not require installation on the user's device and can be used on multiple platforms.
- Web Browser: A software application used to access and view websites and web applications.
- Wishlist: A feature that enables customers to save desired products for future purchase consideration.
- XAMPP: A software package that provides a local server environment for web development, including Apache, MySQL, PHP, and Perl.